

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
16 August 2001 (16.08.2001)

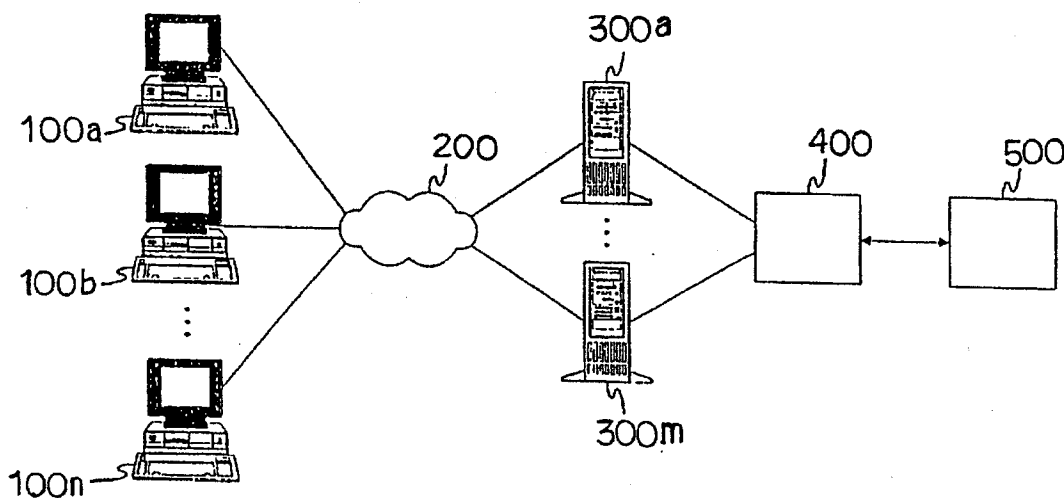
PCT

(10) International Publication Number
WO 01/59990 A1

- (51) International Patent Classification⁷: **H04L 12/14**, G06F 17/60
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- (21) International Application Number: PCT/KR01/00198
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (22) International Filing Date: 10 February 2001 (10.02.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
2000/6192 10 February 2000 (10.02.2000) KR
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
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- Published:
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: METHOD AND SYSTEM FOR BILLING ON THE INTERNET



(57) Abstract: The clients visiting through the internet subscribe to a billing center and select either an advance or a deferred payment. In case of an advance payment, an exchange ticket is purchased and is used for payment. The contents provider willing to adopt the billing system according to the present invention should join through the billing center, set up a billing client program and construct directories and service files according to a billing plan. The constructed directories and service files are registered as menus in the billing center. The service provided to a client in a contents provider's site through the internet is charged according to a menu registered in the billing center. The payment of a bill is performed through a financial agency which is connected to the billing center via a payment gateway.

METHOD AND SYSTEM FOR BILLING ON THE INTERNET

TECHNICAL FIELD

5

The present invention is about billing plans and systems for the billing through a wired or wireless internet connection, and especially on a meter rate or a flat rate plans and billing systems for downloading contents by wired or wireless internet connections or for reading web pages.

10

BACKGROUND ART

According to the development of communications through the internet, services providing music files, pictures, legal or medical services are getting popular. Especially, since the online service for personal computer users becomes popular, information service providing business is also promoted. The online service for personal computer users is provided under a closed environment and it is easy to check how much a client uses specified information, and to demand payment for it. Furthermore, the online service provider takes full charge of the examination of information used and billing, the information service provider can concentrate on the quality of information. It makes the online service a good ground for acquiring quality information.

20

On the other hand according to the popularity of the internet, information offering through the internet is also getting popular. However, unlike the online services the internet

Another purpose of the present invention is to provide billing plans and systems through a wired or wireless internet connection selected from a time meter rate, a packet meter rate, a hit rate, a session meter rate, a flat rate or a complex rate mixing a meter rate and a flat rate according to the characteristics of each site.

5

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a schematic block diagram showing the construction of a billing system according to the present invention.

10

Figure 2 is a schematic block diagram showing the internal structure of a billing center in a billing system according to the present invention.

Figure 3 is a schematic block diagram showing the internal structure of a contents provider in a billing system according to the present invention.

Figure 4 is a flow chart showing the procedures for a contents provider to apply for a subscription and to set up a billing plan and a service charge.

15

Figure 5 through figure 8 are examples of screens which appear when a contents provider sets up a billing plan and a service charge.

Figure 9 is a drawing showing the billing procedure when using contents.

Figure 10 is a drawing showing the motion flow of a billing client in a hit rate and a packet meter rate.

20

Figure 11 is a drawing showing the motion flow of a billing client in a session meter rate.

Figure 12 is a drawing showing the motion flow of a billing client in a time meter

The internet users select either an advance payment of a deferred payment in the internet contents billing center or the contents sites affiliated with the billing center. In case of an advance payment, an exchange ticket is purchased and is used for payment. There are two types of exchange tickets: one is used for specific site only and the other is used for all contents sites affiliated with the internet billing center.

In case of a deferred payment, client has to input his or her settlement information before use and the settlement information can be selected from a credit card number, a bank account number or a cell phone number.

Fig. 2 is a schematic block diagram showing the internal structure of a billing center (400). Fig. 2 shows that the web server (410) enables the internet users or contents providers to connect the billing center (400) through a web. The billing server (420) performs such as menu information transmission, user authorization, inquiry the balance, and billing log creation, and allows the handling of request by billing clients (330) in a contents providers site. The time server (430) measures time in the time meter rate plan. The DB server (440) manages various databases in a billing center (400).

The databases in the billing center (400) include a user DB (441), a contents utilization itemized log statements DB which records detailed utilization history of users, a balance DB (443) which stores the balances of users, a contents provider DB (444) which stores information of contents providers and a billing log DB (445) which stores histories on billing.

The payment handling client (450) is connected to financial agencies through a payment gateway (500) and performs functions such as payment of expenses resulting from purchase of an exchange ticket or use of contents.

Figure 3 is a schematic block diagram showing the internal structure of a contents

information are possible. When a deferred payment is selected, a user can access to contents after the user registration.

2. Registration of a Contents Provider

5 A contents provider (300) has to register a billing center (400) in order to utilize a billing plan according to the present invention.

A contents provider (300) connects to the homepage of the billing center (400) using a web browser. In the homepage, the contents provider (300) moves to a 'Contents Provider's Registration' page and fills out information to subscribe (S100 step). Once the
10 request to join is approved, the billing center (400) issues a contents provider's code ("contents provider code" hereinafter) and recognizes it as a formal contents provider (S110 step). The provided information is stored in a contents provider DB (444).

The subscription of a contents provider is possible not only through an online but also in off-line. When the application form is filled out and is sent to a billing center (400),
15 the billing center may approve the subscription after an examination on the application form. The result is notified to a prospective contents provider via mail or an e-mail.

Once the contents provider finishes registration, it should install a client program for billing in the system providing contents (S120 step). The program is obtainable by downloading from a homepage or from a CD-ROM.

20 When the billing client program is downloaded, the contents provider code and the password obtained in the registration are entered and a billing client program corresponding to the contents provider code can be downloaded. When subscribing off-line, a billing agent program corresponding to a specific contents provider code is stored in a CD-ROM and is

services can be relayed by a client program, or only the charged service can be relayed by a client program.

The menu classified as a charged service can be either a real directory or a service file depending on a service type, which should be born in mind before organizing
5 directories and service files.

The directory or service file registered on a service menu is used for a keyword in the link conversion process of a billing client program, therefore, registration of a directory or a service file in the same name is impossible.

10 c. Decision of a billing plan.

When a basic directory for a service is established, a billing plan has to be decided. In this invention, four billing plans such as a hit rate, a packet meter rate, a session meter rate, and a time meter rate plans are supported. A contents provider can select a billing plan
15 suitable for the contents provided. The billing plan in the present invention also supports multiple billing plans and selection of all methods are possible.

d. Organization of a directory and a service file for real contents

The billing center provides a billing service in the unit of a menu, and a billing client provides contents containing information on the menu (which is a real directory or a
20 service file containing contents of a contents provider and is an identical unit in classification items such as a billing plan/price/others). Therefore, the contents provider has to classify provided contents according to a menu for an appropriate billing. Also, the registered menu must have an 1:1 correspondence to either a directory or a service file. In

link is to set all paths from the root directory of a web server.

<Example of a Directory Organization>

The menu organization methods and procedures are explained below with
5 examples. In the following exemplary site, in order to differentiate service menus by
directories and for a proper service of a billing client, service menus are registered by
directories which the real billing client program can identify.

a. Classify free/charged services

10 Organization of contents of "MeetingNuri"

1. Explanation of a service

2. Applications (charged)

3. Information on female applicants (charged)

4. Information on male applicants (charged)

15 5. Board

Considering relations among the categories, items 1 to 4 including free services are
provided through a billing client, and the board on the fifth item is provided through a free
board offered from another site.

20

b. Basic service directory of a billing client.

"MeetingNuri" is decided to use CBS as a basic service directory, which is created
under a root directory.

C:\CBS\hit\bin : a directory containing a program from a hit rate type contents.

C:\CBS\hit\female : a directory containing images and information on female applicants.

5 C:\CBS\hit\html : a directory containing a mother page having a hit rate type contents.

C:\CBS\hit\male : a directory containing images and information on male applicants.

C:\CBS\hit\register : a directory containing a page for a register.

10 C:\CBS\packet\zip : a directory containing zip files with information and images on female applicants or male applicants (a packet meter rate billing).

e. Mapping of a basic service directory by a virtual path.

With the actual directories created above, virtual directories are mapped on a web server. The virtual directory path for mapping is the same with the actual directory path.

15

f. Establishment of a hyperlink, an image and an applet.

The following is an exemplary homepage of MeetingNuri. Paths for hyperlinks, images and applets are established in a webpage as shown below.

...

20

```
<table border=0 cellpadding=3 align="center">
```

```
<tr>
```

```
<td><font size=4 color="#FFFFFF">1</font></td>
```

```
<td><a href="/cbs/hit/female/image/chr_fpic1.jpg">
```


That is to say, a billing plan is selected from "Billing" menu, a billing unit is selected from "Unit" menu, and a price for the billing unit can set in the "Price" menu. Furthermore, a contents provider (300) can assign a name of a menu in the corresponding directory.

5 In addition, it is possible to set contents for adult only or for general clients, or for charged service or for free. When contents is set for adults only, it is possible to identify if a client is adult or under age in a user authorization process and therefore it is possible to block an under age person from accessing the adult information.

When a billing plan and price are set, click on the "Menu Registration" button to
10 finish the registration of a menu.

Fig. 8 is an example of a screen to manage the registered menu. Fig. 8 show a screen displaying a registered menu list.

Fig. 5 to Fig. 8 are just examples of setting a billing and pricing plans. The billing and pricing plans can be set under different user interfaces. The present invention is not
15 limited to a specific user interface.

3. Purchase of an exchange ticket for contents

Clients registered in the billing center (400) can purchase an exchange ticket for contents.

20 First of all, a client (100) connects to a homepage of a billing center (400) and inputs an ID and a password to log in. Next, the client moves to a purchase page for an exchange ticket for contents.

In the purchase page, a client selects a price and billing plan for an exchange ticket

cp_cd, menu_cd and filename of the corresponding contents.

2. The billing client (330) of contents provider analyzes requests from a client's browser

5 - From the menu_cd transmitted upon request, the menu information is analyzed by a hash table of the billing client (330).

 - It analyzes free/charged services, billing plan, price, states, etc. of the requested menu.

10 - In case of a charged service, it requests an authorization of a client by opening an authorization window, and in case of free services proceeds step 11 without authorization.

 - In case of a session meter rate plan from the analysis of billing plan, it needs to analyze if it is an ongoing session or a new session.

 - The continuance of a session is decided from the header information of the request transmitted from a browser.

15 - In case of an ongoing session, proceeds to step 11 without transmission of authorization, balance checking and an itemized log statement.

3. Request for an ID and a password for an authorization (charged menu)

20 - In case of a charged service, request an ID and a password to a client's browser for a client authorization.

 - The request for an ID and a password is performed by the request of an authorization header defined in the HTTP protocol.

- If it is found that the client is not registered, a request for an ID and a password is sent to a client's browser again.

8. Request for a balance data of a client (charged menu)

5 - After identifying client's registration, a request for a balance is sent to a billing server (420).

- Upon balance request, client's ID and password are also transmitted.

9. Transmission of a client's balance data (charged menu)

10 -The billing server transmits a client's balance data to the billing client (330) after examining the client's balance data from a DB of the billing server (420).

10. Comparison of the client's balance and the price of a menu (charged menu)

15 - The billing client compares the price of a corresponding menu with the client's balance after receiving the balance data from the billing server (420).

- If the balance is less than the price of the corresponding menu, transmits an inadequate balance message to a client's browser and stop the requested service.

- If the balance is more than the price of the corresponding menu, proceed to step

11.

11. Provide contents directly or by requesting to a web server

20 - Analyze the position and types of the corresponding contents file through a requested menu and the file name after examining a hash table of the billing client (330).

14. Transmission of converted contents (transmission including a time script in case of a time meter rate plan)

- The billing client (330) transmits converted contents of a contents provider to a client's browser.

- In case of a time meter rate plan, contents with a time script are transmitted.

- When a time script is included, variables used for the time script are converted before transmission.

15. Measurement of service time of a client (in case of a time meter rate plan)

- The time script transmitted from the billing client to a client's browser checks time from the moment the pertinent contents page is loaded on a client's browser screen.

- The time served on a client's browser is compared to the time set on interval variables of a time script and is checked if it passed the set time or not.

- After a time set on an interval variable the time script repeatedly transmits a log statement information to a time server (430).

16. Transmission of client's itemized log statement (in case of a time rate plan)

- In the time meter rate plan the time script transmits a client's itemized log statement to a time server at intervals specified on the interval variables.

- The client's itemized log statement comprises cp_cd, menu_cd, user_id, and a password, and the time the corresponding menu service begins is also transmitted.

- The time server which received the client's itemized log statement sent by the

The billing client (330) receives the client's balance, and if the balance is less than the price of the corresponding contents menu it transmits an insufficient balance message. In a hit rate plan, the price of a corresponding menu is the price of a contents. In a packet meter rate plan, the price of a contents is decided by the file size.

5 According to the use of contents by a client, client's log statement on the content is transmitted to the billing server (420) (⑥).

If the balance is more than the price of the contents menu, real contents is transmitted to a client's browser (⑦). In this occasion, if the contents is an HTML file a conversion process on the links is performed.

10 For client's passed the authorization step, the steps ① - ③ are omitted and the steps from ④ are repeated.

5.2 A session meter rate plan

A session meter rate plan is a plan which charges a client for a session participated.

15 Figure 11 is a drawing showing the motion flow of a billing client in a session meter rate.

A client requests contents of a contents provider's menu to the billing client (330) using a web browser (①).

20 Then, the billing client (330) determines if the current session is an ongoing session or a newly begin one. If it is an ongoing session, it transmits real contents to a client's browser without an authorization nor a request for a balance (⑦).

For a newly begin session, current time is saved in the session information and an ID and a password received from an authorization window are transmitted to a billing

If the header received from the client's browser contains a session information on the corresponding menu and none of the above cases applies, it is considered as an ongoing session.

5 5-3 A time meter rate plan

A time meter rate plan is a plan which charges by the time a client uses contents. In the time meter rate plan, a specified amount is charged on a specified interval such as 100 won per minute.

Figure 12 is a drawing showing the motion flow of a billing client in a time meter
10 rate plan.

<Legends on variables>

menuStartTime: The time when a menu started (cp_time)

BACurrentTime: The time when the billing client operates

15 scriptCurrentTime: The time when a time script operates

timeError: Difference between BACurrentTime and scriptCurrentTime

A variable to synchronize the billing client and TimeScript

timeScriptTime: The time set on a Cookie which is transmitted from the
TimeScript to a browser

20 e_time: The time when the first menu started or the elapsed time since a message is
sent to the TimeServer.

interval: Unit time for billing

timeMenuContinue: The flag to identify if a menu is ongoing or not.

Once the time script has begun and the interval-e_time has passed, it transfers a message to the time server. Since then, it transfers messages to the time server every interval period.

When the message is transferred, the timeScriptCookie is set and is sent to a browser (this Cookie is received by a billing client (330) at a later time).

The time when a message is transmitted (timeScriptTime) is stored in the timeScriptCookie. That is, the timeScriptTime equals startMenuTime + interval*n (at this point, in order to save the current time to the billing client (330), the scriptCurrentTime + timeError is saved).

<Setting of timeMenuContinue flag>

To identify if a menu is under an ongoing state or newly begins, timeMenuContinue flag is created.

Imagine two menus, menu A and menu B. A → B is moving to a new menu and A → A means an ongoing menu. Within an interval (one minute), if a client moves like A → B → A, then A → B is beginning a new menu and B → A is an ongoing use of a previous menu A.

Flag setting

If $(BACurrentTime - timeScriptTime) < (60 + error)$, then menu is considered ongoing.

Error is introduced because of a dead time involved in the request step to the billing client (330) or a dead time in the movement of Javascript.

internet can be selected from a time meter rate, a packet meter rate, a hit rate, a session meter rate, a flat rate or a complex rate mixing a meter rate and a flat rate, and therefore an effective billing suitable for the characteristics of each site can be chosen.

Still furthermore, the billing unit is a menu and each menu corresponds to one
5 directory, which makes the correction, addition or deletion of contents by a contents provider easy. It is because the contents is composed of a single file unit and the position of the contents in a directory affects billing. In order to add contents simply place contents in a directory registered as a menu and no other additional correction is necessary.

gateway.

2. An internet billing system according to the claim 1,

wherein the aforementioned billing center contains an additional time server to
5 measure time, and the time server measures the internet user's served time on the contents
assigned to a time meter rate plan and notifies the service time to a billing server.

3. An internet billing plan which is to bill service charges resulting from the use of
contents in a contents provider's website by an internet user by employing a billing system
10 which comprise a billing center, a contents provider connected to the billing center, a
billing gateway for an interface of the billing center and a financial agency,

which is characterized by

an internet user registration step in which an internet user registers in the above
billing center,

15 a contents provider registration step in which the above contents provider registers
in the above billing center and installs a billing client program,

a contents use request step in which the above internet user requests the use of
contents provided by the above contents provider,

a contents offering step in which the above billing client program requests contents
20 asked by the above internet user to the above billing server of the billing center followed by
the offering of the contents authorized by the above billing server to the internet users, and

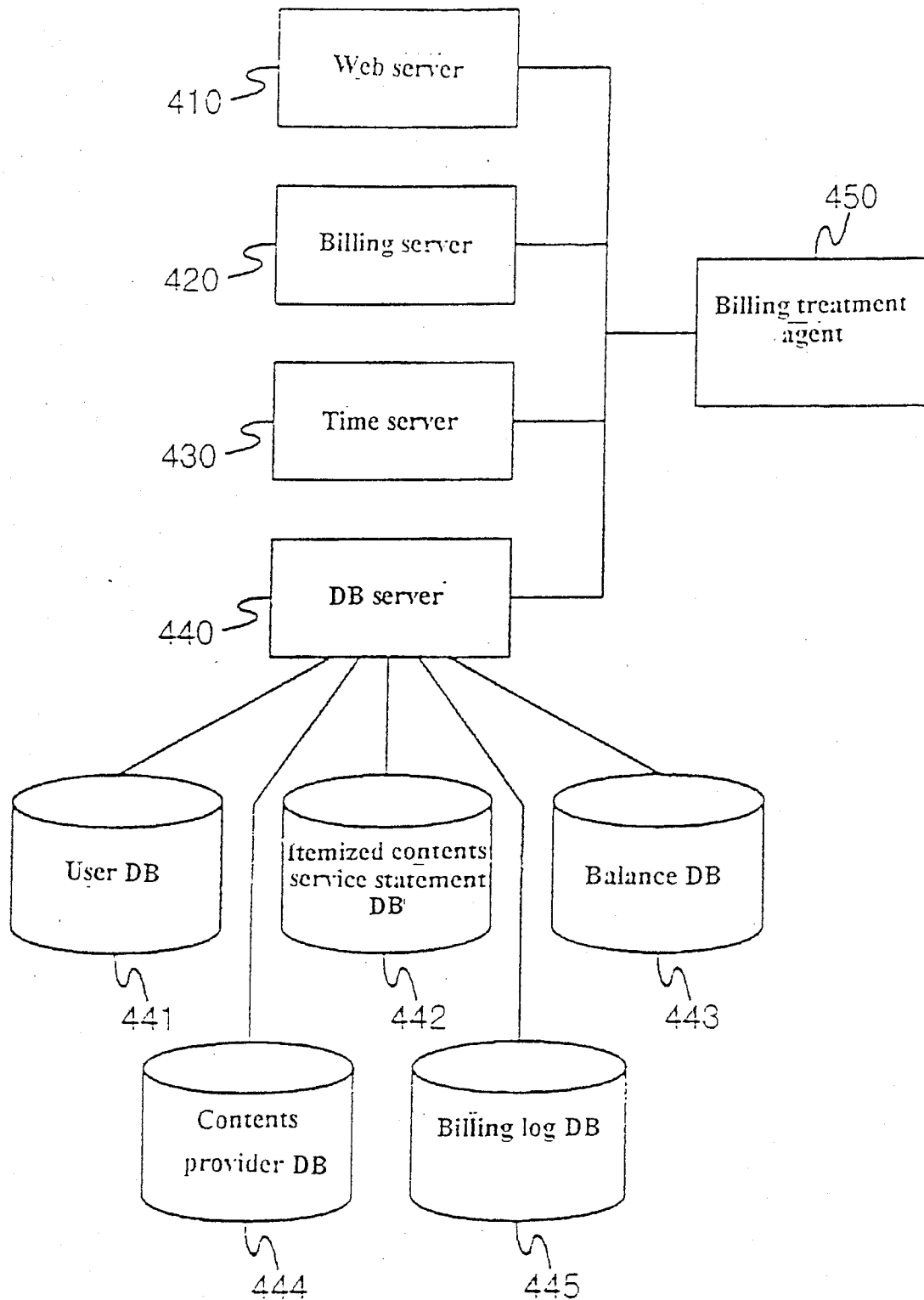
a billing step in which the above billing client bills users according to an itemized
served contents statement.

wherein in a time meter rate plan the contents is provided to an internet user if the price assigned to a predetermined interval since the beginning of a specific menu by the internet user is less than the user's balance.

- 5 8. An internet billing plan according to any claim from the claim 3 to claim 7,
which additionally comprises a step in which the above internet user purchase a contents exchange ticket by connecting to the above billing center,
a step in which the above billing center renews the user's balance database according to the contents exchange ticket amount purchased by the above internet user, and
10 a step in which the amount resulting from the use contents by the internet user is subtracted from the balance of the balance database.

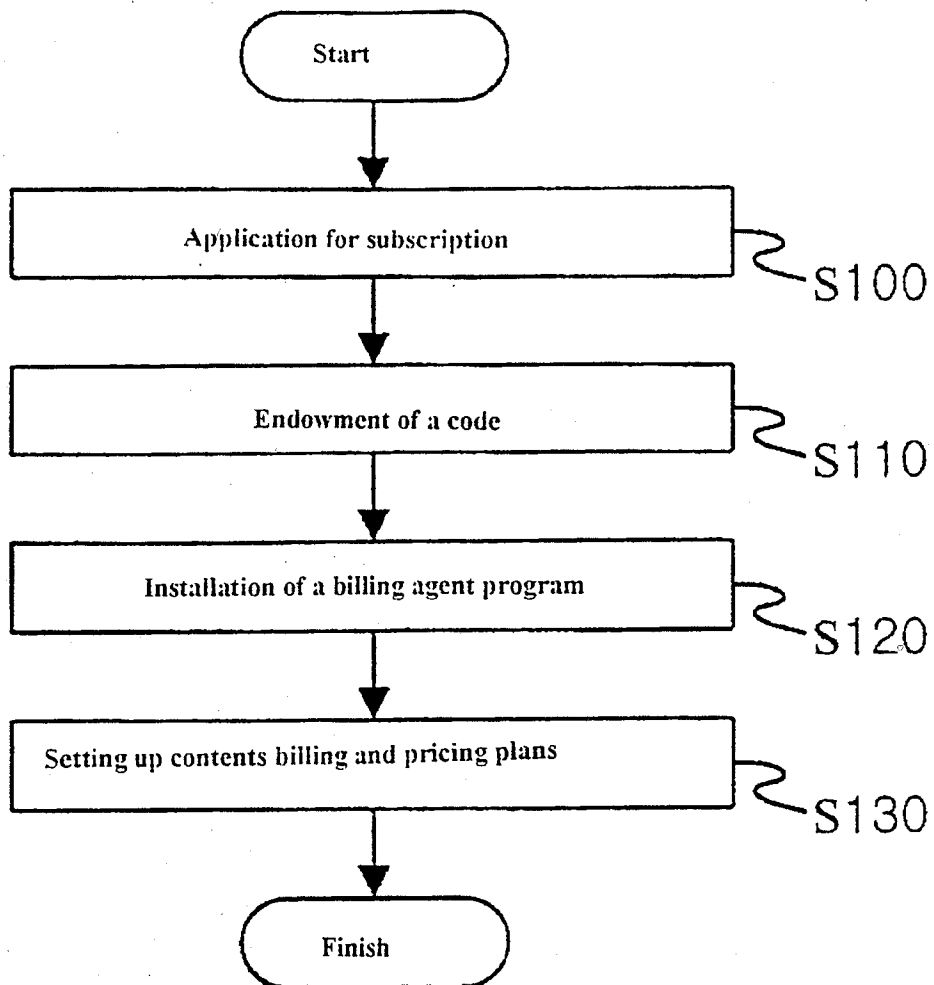
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Fig. 2



4/12

Fig. 4



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Fig. 6







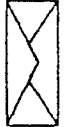




      	URL http://www.atbill.net	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  home  site map </div> <div style="text-align: center;"> Contents Search <input style="width: 100px;" type="text"/> <input type="button" value="GO"/> </div> </div> <div style="display: flex; justify-content: space-between; align-items: center; margin-top: 10px;"> <div style="text-align: center;">  <p>Internet billing service</p> </div> <div style="border: 1px solid black; padding: 5px; width: 100%;"> <p>CP subscription Join a member atbill introduction board.</p> <p>Purchase of a contents exchange ticket sites of recommendation</p> <div style="display: flex; justify-content: space-between;"> mcmbts-menu CP menu </div> </div> </div>																												
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>Click</p> </div> <div style="border: 1px solid black; border-radius: 15px; padding: 5px 10px;"> atbill CP </div> <div style="text-align: center;"> <p>CP : 0501</p> <p>directory/inquiry of registered information no. of registered directories: 8</p> </div> </div>																														
<div style="display: flex; justify-content: space-between;"> <div> <p>management of a directory</p> <p>management of directories</p> <p>management of menus</p> <p>inquiry of sales</p> <p>menu statistics of this month</p> <p>member statistics of this month</p> <p>CP board!</p> </div> <div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>No.</th> <th>directory name</th> <th>reg. date</th> </tr> </thead> <tbody> <tr><td>1</td><td>/sss/dbri2</td><td>27-JAN-00</td></tr> <tr><td>2</td><td>/sss/dari2</td><td>27-JAN-00</td></tr> <tr><td>3</td><td>/lll/dcri2</td><td>27-JAN-00</td></tr> <tr><td>4</td><td>/kl/dcri2</td><td>27-JAN-00</td></tr> <tr><td>5</td><td>/mmm/deri2</td><td>27-JAN-00</td></tr> <tr><td>6</td><td>/nnn/dfri2</td><td>27-JAN-00</td></tr> <tr><td>7</td><td>/llls/dgri2</td><td>27-JAN-00</td></tr> <tr><td>8</td><td>/kdkd/dhri2</td><td>27-JAN-00</td></tr> </tbody> </table> </div> </div>				No.	directory name	reg. date	1	/sss/dbri2	27-JAN-00	2	/sss/dari2	27-JAN-00	3	/lll/dcri2	27-JAN-00	4	/kl/dcri2	27-JAN-00	5	/mmm/deri2	27-JAN-00	6	/nnn/dfri2	27-JAN-00	7	/llls/dgri2	27-JAN-00	8	/kdkd/dhri2	27-JAN-00
No.	directory name	reg. date																												
1	/sss/dbri2	27-JAN-00																												
2	/sss/dari2	27-JAN-00																												
3	/lll/dcri2	27-JAN-00																												
4	/kl/dcri2	27-JAN-00																												
5	/mmm/deri2	27-JAN-00																												
6	/nnn/dfri2	27-JAN-00																												
7	/llls/dgri2	27-JAN-00																												
8	/kdkd/dhri2	27-JAN-00																												
<div style="display: flex; justify-content: space-between;"> <div> <p>menu registration deletion of a directory</p> <p>select all</p> </div> <div> <p>cancel</p> </div> </div>																														

Fig. 8

 	URL http://www.atbill.net
------------------------------	--

@bill

Internet billing service

home site map

Contents Search

CP subscription Join a member	Purchase of a contents exchange ticket	atbill introduction sites of recommendation	CP menu CP menu
----------------------------------	---	--	--------------------

Purchase of contents exchange tickets CP : 0010 menu information inquiry |

CP menu management

atbill CP

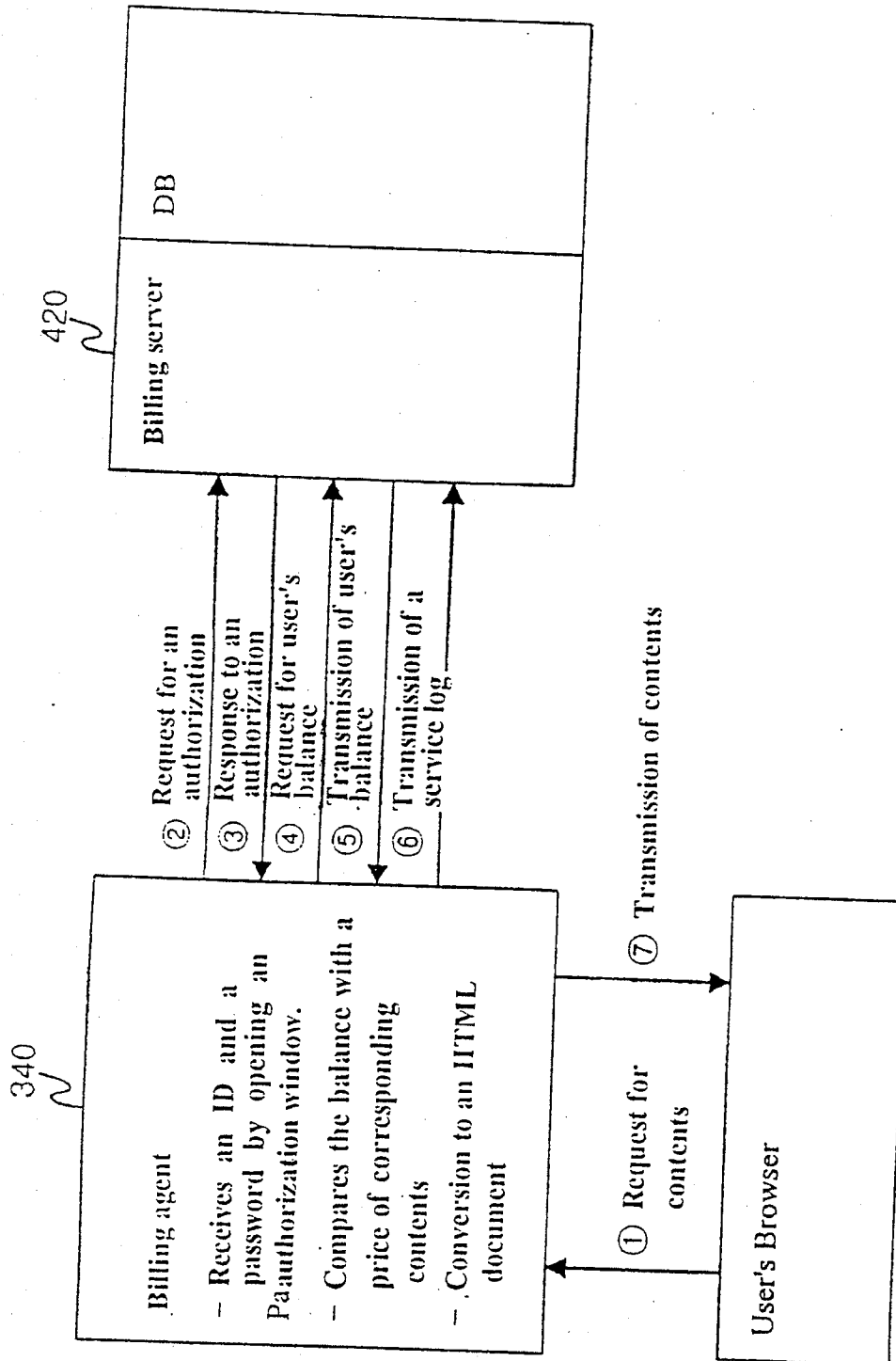
- registration of a directory
- management of directories
- management of menus
- inquiry of sales
- menu statistics of this month
- member statistics of this month
- CP board

registered menus: 42

code	menus	price	billing plan	unit	division	date	directory	state	select
0049	free test	300	HT	1	general/free	22-JAN-00	/kkk/dlrl2	standby	<input type="checkbox"/>
0048	test 6	100	HT	1	adult/charged	21-JAN-00	/kkk/dfri2	cancel	<input type="checkbox"/>
0046	session information paradise	1000	SS	20	adult/free	17-JAN-00	/kkk/darl2	in use	<input type="checkbox"/>
0045	real test	900	HT	1	성인유료	17-JAN-00	/kkk/dhri2	대거	<input type="checkbox"/>
0044	parkjanyushop ?	300	HT	1	성인무료	17-JAN-00	/aaaa/darl2	stop	<input type="checkbox"/>
0043	test 7	1234	PK	1	general/charged	17-JAN-00	/aaaa/dgri2	정지	<input type="checkbox"/>
0038	test 18	233	HT	1	성인유료	16-JAN-00	/atbill/dlrr4	사용	<input type="checkbox"/>

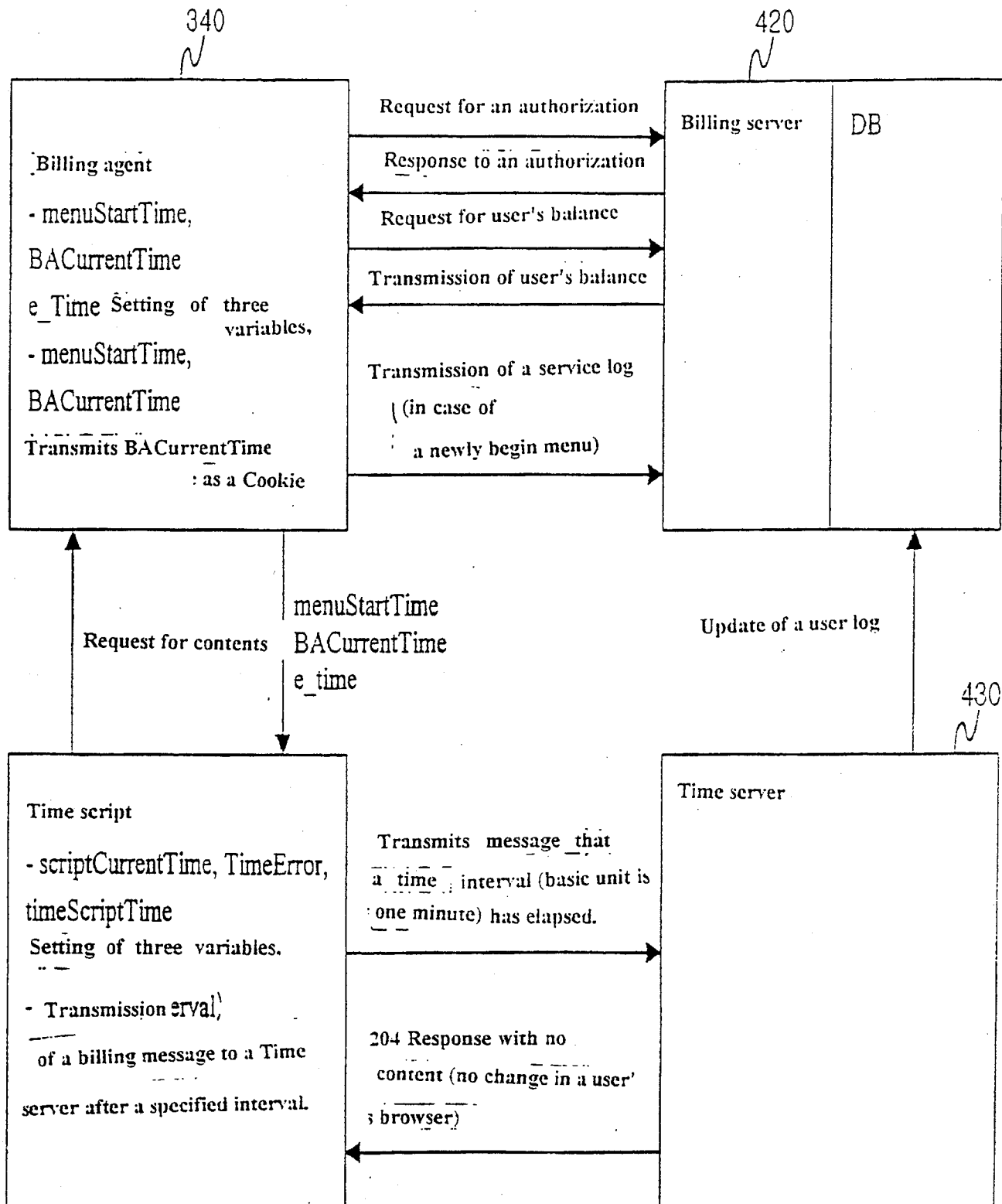
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Fig. 10



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Fig. 12



INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR01/00198

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 3 - 8
because they relate to part of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
Although claim 3-8 relate to internet billing plan that is not patentable, the search has been carried out and based on the alleged effects of the compounds/compositions
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Search Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be established without effort justifying an additional fee, this Authority did not invite payment of any addition fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.